



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

IAN A. BOWLES
Secretary

LAURIE BURT
Commissioner

ERP DRY CLEANER REGULATION
310 CMR 7.26(10)-(16)

September 2008

7.26: Industry Performance Standards

((1) - (9) RESERVED)

Delete the current 7.26(10)-(16) and replace with the following:

(10) Perchloroethylene Air Emissions Standards for Dry Cleaning Facilities - Applicability.

- (a) Except as provided in 310 CMR 7.26(12)(a) and (b), each dry cleaning facility shall comply with the provisions of 310 CMR 7.26(10) through (16) beginning on May 2, 1997 or immediately upon startup, whichever is later. All coin-operated dry cleaning machines are exempt from the requirements of 310 CMR 7.26(10) through (16).
- (b) The provisions of 310 CMR 7.26(10) through (16) apply to the owner or operator of a dry cleaning facility that has:
 - 1. Only dry-to-dry machine(s) and has perchloroethylene consumption equal to or less than 2,100 gallons per 12-month rolling period as determined in accordance with 310 CMR 7.26(10)(c); or
 - 2. Only a transfer machine system(s) or both dry-to-dry machine(s) and transfer machine system(s) and has perchloroethylene consumption equal to or less than 1,800 gallons per 12-month rolling period as determined in accordance with 310 CMR 7.26(10)(c).
- (c) When calculating the perchloroethylene consumption for each 12-month rolling period for the purpose of determining applicability under 310 CMR 7.26(10)(a), the owner or operator shall sum on the first day of every month the volume of all perchloroethylene purchases made in each of the previous 12 months, as recorded in the log described in 310 CMR 7.26(15)(d)1.
- (d) Notwithstanding the forgoing, these regulations do not apply to dry-to-dry perchloroethylene dry cleaning facilities co-located with a residence, installed between December 21, 2005-July 13, 2006. *N.B* These dry-to-dry facilities are subject to the federal Maximum Available Control Technology (MACT) standards for perchloroethylene dry cleaning facilities (40 CFR Part 63, Subpart M).

(11) Definitions. The definitions found in 310 CMR 7.00 apply to 310 CMR 7.26(10) through (16). The following words and phrases shall have the following meanings as they appear in 310 CMR 7.26(10) through (16). Where a term is defined in the 310 CMR 7.00 Definitions and the definition also appears in 310 CMR 7.26(11), the definition in 310 CMR 7.26(11) controls for 7.26(10) through (16).

Ancillary equipment means the equipment used with a dry cleaning machine in a dry cleaning system including, but not limited to, emission control devices, pumps, filters, muck cookers, stills, solvent tanks, solvent containers, water separators, exhaust dampers, diverter valves, interconnecting piping, hoses, and ducts.

Articles mean clothing, garments, textiles, fabrics, leather goods, and the like, that are dry cleaned.

Carbon adsorber means a bed of activated carbon into which an air-perchloroethylene gas-vapor stream is routed and which adsorbs the perchloroethylene on the carbon.

Co-located means a dry cleaning facility located in a building with a residence, a licensed day care center, a health care facility, a prison, an elementary school, a middle or high school, a children's pre-school, a senior center or a youth center.

Coin-operated dry cleaning machine means a dry cleaning machine that is operated by the customer (that is, the customer places articles into the machine, turns the machine on, and removes articles from the machine).

Colorimetric detector tube means a glass tube (sealed prior to use), containing material impregnated with a chemical that is sensitive to perchloroethylene and is designed to measure the concentration of perchloroethylene in air.

Construction means the fabrication (onsite), erection, or installation of a dry cleaning system subject to 310 CMR 7.26(10) through (16).

Desorption means regeneration of a carbon adsorber by removal of the perchloroethylene adsorbed on the carbon.

Diverter valve means a flow control device that prevents room air from passing through a refrigerated condenser when the door of the dry cleaning machine is open.

Dry cleaning means the process of cleaning articles using perchloroethylene.

Dry cleaning cycle means the washing and drying of articles in a dry-to-dry machine or transfer machine system.

Dry cleaning facility means an establishment with one or more dry cleaning systems.

Dry cleaning machine means a dry-to-dry machine or each machine of a transfer machine system.

Dry cleaning machine drum means the perforated container inside the dry cleaning machine that holds the articles during dry cleaning.

Dry cleaning system means a dry-to-dry machine and its ancillary equipment or a transfer machine system and its ancillary equipment.

Dryer means a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream (see reclaimer).

Dry-to-dry machine means a one-machine dry cleaning operation in which washing and drying are performed in the same machine.

Exhaust damper means a flow control device that prevents the air-perchloroethylene gas-vapor stream from exiting the dry cleaning machine into a carbon adsorber before room air is drawn into the dry cleaning machine.

Filter means a porous device through which perchloroethylene is passed to remove contaminants in suspension. Examples include, but are not limited to, lint filter, button trap, cartridge filter, tubular filter, regenerative filter, prefilter, polishing filter, and spin disc filter.

Halogenated hydrocarbon detector means a portable device capable of detecting vapor concentrations of perchloroethylene of 25 parts per million by volume and indicating a concentration of 25 parts per million by volume or greater by emitting an audible or visual signal that varies as the concentration changes.

Heating coil means the device used to heat the air stream circulated from the dry cleaning machine drum, after perchloroethylene has been condensed from the air stream and before the stream reenters the dry cleaning machine drum.

Muck cooker means a device for heating perchloroethylene-laden waste material to volatilize and recover perchloroethylene.

PCE (Perchloroethylene)-gas analyzer means a flame ionization detector, photoionization detector, or infrared analyzer capable of detecting vapor concentrations of perchloroethylene of 25 parts per million by volume.

Perceptible leaks mean any perchloroethylene vapor or liquid leaks that are obvious from:

- (a) the odor of perchloroethylene;
- (b) visual observation, such as pools or droplets of liquid; or
- (c) the detection of gas flow by passing the fingers over the surface of equipment.

Perchloroethylene consumption means the total volume of perchloroethylene purchased based upon purchase receipts or other reliable measures.

Reclaimer means a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream (see dryer).

Reconstruction means replacement of a washer, dryer, or reclaimer; or replacement of any components of a dry cleaning system to such an extent that the fixed capital cost of the new components exceeds 50% of the fixed capital cost that would be required to construct a comparable new source.

Refrigerated condenser means a vapor recovery system into which an air-perchloroethylene gas-vapor stream is routed and the perchloroethylene is condensed by cooling the gas-vapor stream.

Refrigerated condenser coil means the coil containing the chilled liquid used to cool and condense the perchloroethylene.

Residence means any dwelling or housing in which people reside excluding short-term housing that is occupied by the same person for a period of less than 180 days (such as a hotel room).

Room enclosure means a stationary structure that encloses a transfer machine system, and is vented to a carbon adsorber or an equivalent control device during operation of the transfer machine system.

Secondary carbon adsorber means a carbon adsorber into which the air-perchloroethylene gas vapor stream from inside the dry cleaning machine drum is routed immediately before the door of the dry cleaning machine is opened.

Source means each dry cleaning system.

Still means any device used to volatilize and recover perchloroethylene from contaminated perchloroethylene.

Temperature sensor means a thermometer or thermocouple used to measure temperature.

Transfer machine system means a multiple-machine dry cleaning operation in which washing and drying are performed in different machines. Examples include, but are not limited to:

- (a) a washer and dryer(s);
- (b) a washer and reclaimer(s); or
- (c) a dry-to-dry machine and reclaimer(s).

Vapor leak means a perchloroethylene vapor concentration exceeding 25 parts per million by volume (50 parts per million by volume as methane) as indicated by a halogenated hydrocarbon detector or PCE gas analyzer.

Washer means a machine used to clean articles by immersing them in perchloroethylene. This includes a dry-to-dry machine when used with a reclaimer.

Water separator means any device used to recover perchloroethylene from a water-perchloroethylene mixture.

Year or Yearly means any consecutive 12-month period of time.

(12) Perchloroethylene Dry Cleaning Systems.

(a) Dry-to-Dry machine. An owner or operator of a dry-to-dry machine shall comply with the following requirements:

1. A dry-to-dry machine installed prior to December 9, 1991, shall be equipped with either a carbon adsorber or refrigerated condenser by September 22, 1993.
2. A dry-to-dry machine installed on or after December 9, 1991, shall be equipped with a refrigerated condenser.
3. A dry-to-dry machine installed on or after December 21, 2005 shall be equipped with a refrigerated condenser and a secondary carbon adsorber as of September 5, 2008.
4. The installation of a co-located dry-to-dry machine, except those co-located with a residence, is prohibited as of November 5, 2008.
5. The installation of a dry-to-dry machine(s) co-located with a residence is prohibited as of September 5, 2008.
6. All co-located dry-to-dry machines shall cease operation on or before December 21, 2020.
7. All dry-to-dry machines co-located with a residence installed after July 13, 2006 shall cease operation as of September 5, 2008.¹
8. The operation, maintenance, testing, monitoring, recordkeeping and reporting requirements of 310 CMR 7.26(13) through (15), as applicable.

¹ Under the federal MACT, dry cleaners co-located with a residence were prohibited from operating as of July 13, 2006. Upon the effective date of 310 CMR 7.26(10)-(16) this prohibition also became a state requirement.

(b) Transfer machine system. The installation of transfer machine(s) is prohibited as of May 2, 1997. On or before September 22, 1993, all transfer machine systems shall be equipped with a carbon adsorber or a refrigerated condenser.

1. The owner or operator of a transfer machine system equipped with a refrigerated condenser shall:
 - a. Not vent the air-perchloroethylene gas-vapor contained within the washer to the atmosphere until the washer door is opened;
 - b. Monitor in accordance with 310 CMR 7.26(12)(b)2.;
 - c. Not use the same refrigerated condenser coil for the washer that is used by a dry-to-dry machine, dryer, or reclaimer; and
 - d. Ensure the temperature difference between the air-perchloroethylene gas-vapor stream entering the refrigerated condenser on a washer and the air-perchloroethylene gas-vapor stream exiting the refrigerated condenser on the washer is greater than or equal to 20°F (11.1°C).
2. The owner or operator shall calculate, on a weekly basis, the difference between the temperature of the air-perchloroethylene gas-vapor streams entering and exiting the refrigerated condenser on a washer and the temperature of the air-perchloroethylene gas-vapor stream. The owner or operator shall measure the inlet and outlet streams with a temperature sensor. Each temperature sensor shall be used according to the manufacturer's instructions, and designed to measure at least a temperature range from 32°F (0°C) to 120°F (48.9°C) to an accuracy of $\pm 2^\circ\text{F}$ ($\pm 1.1^\circ\text{C}$).
3. The owner or operator shall comply with the operation, maintenance, testing, monitoring, recordkeeping and reporting requirements of 310 CMR 7.26(13) through (15), as applicable
4. The owner or operator shall cease operation of their transfer machines on or before September 5, 2008.

(13) Operation and Maintenance Requirements.

(a) The owner or operator shall close the door of each dry cleaning machine immediately after transferring articles to or from the machine, and shall keep the door closed at all other times except to the extent necessary during maintenance operations.

(b) The owner or operator of each dry cleaning system shall operate and maintain the system according to the manufacturers' specifications and recommendations.

(c) The owner or operator of a dry cleaning system equipped with a refrigerated condenser shall:

1. Not vent or release the air-perchloroethylene gas-vapor stream contained within the dry cleaning machine to the atmosphere while the dry cleaning machine drum is rotating;
2. Monitor the refrigerated condenser in accordance with 310 CMR 7.26(14)(a);
3. Operate the dry cleaning system with a diverter valve or equivalent design so as to prevent air drawn into the dry cleaning machine when the door of the machine is open from passing through the refrigerated condenser; and
4. Maintain the temperature of the air-perchloroethylene gas-vapor stream at the end of the cool down cycle on the outlet side of the refrigerated condenser on a dry-to-dry machine, dryer, or reclaimer at equal to or less than 45°F (7.2°C).

(d) The owner or operator of a dry cleaning system equipped with a primary or secondary carbon adsorber shall:

1. Not bypass the carbon adsorber or secondary carbon adsorber to vent or release any air-perchloroethylene gas-vapor stream to the atmosphere at any time; and
2. Monitor the carbon adsorber in accordance with the requirements in 310 CMR 7.26(14)(b) as applicable.

(e) If parameter values monitored under 310 CMR 7.26(13)(c) or (d), do not meet the values specified in 310 CMR 7.26(14)(a), or (b), the owner or operator shall make adjustments or repairs to the dry cleaning system or control device to meet those values. If repair parts must be ordered, either a written or verbal order for such parts shall be initiated within two working days of detecting such a parameter value. Such repair parts shall be installed as soon as possible, but in no case later than, five working days after receipt of the parts.

(f) The owner or operator of a dry cleaning system shall drain all cartridge filters in their housing, or other sealed container, for a minimum of 24 hours, or shall treat such filters in an equivalent manner, before removal from the dry cleaning facility.

(g) The owner or operator of a dry cleaning system shall store all perchloroethylene and wastes that contain perchloroethylene in solvent tanks or solvent containers with no perceptible leaks.

(h) The owner or operator of a dry cleaning system shall inspect the following components weekly for perceptible leaks while the dry cleaning system is operating:

1. Hose and pipe connections, fittings, couplings, and valves;
2. Door gaskets and seatings;
3. Filter gaskets and seatings;
4. Pumps;
5. Solvent tanks and containers;
6. Water separators;
7. Muck cookers;
8. Stills;
9. Exhaust dampers;
10. Diverter valves (if required); and
11. All filter housings.

(i) The owner or operator of a dry cleaning system shall inspect the components identified in 310 CMR 7.26(13)(h) at least weekly for vapor leaks. The operator shall place the probe inlet near the surface of each component interface where leakage could occur and move it slowly along the interface periphery. One of the following methods or devices, operated in accordance with the manufacturer's instructions shall be used:

1. a halogenated-hydrocarbon detector;
2. a PCE gas analyzer; or
3. an alternative method approved by the Department. Sufficient documentation shall be provided to the Department to demonstrate that the alternative method is capable of detecting vapor concentrations of PCE of 25 ppm by volume.

(j) The owner or operator of a dry cleaning system shall repair all leaks detected under 310 CMR 7.26(13)(h) and (i) within 24 hours. In the event that repair parts must be ordered, either a written or verbal order for those parts shall be initiated within two working days of detecting such a leak. Such repair parts shall be installed as soon as possible but in no case later than five working days after receipt of the parts.

(k) Each owner or operator of a dry cleaning facility shall retain onsite a copy of the design specifications and the operating manuals for each dry cleaning system and each emission control device located at the dry cleaning facility.

(14) Test methods and monitoring.

- (a) The owner or operator of a dry cleaning system equipped with a refrigerated condenser shall either:
1. Monitor, on a weekly basis, the refrigeration system high pressure and low pressure during the drying phase to determine if they are in the range specified in the manufacturers operating instructions; or
 2. Measure the temperature of the air-perchloroethylene gas-vapor stream on the outlet side of the refrigerated condenser on a dry-to-dry machine, dryer, or reclaimer weekly with a temperature sensor to determine if it is equal to or less than 45°F (7.2°C). The temperature sensor shall be used according to the manufacturer's instructions and shall be designed to measure a temperature of 45°F (7.2°C) to an accuracy of ± 2 °F (± 1.1 °C).
- (b) The owner or operator of a dry cleaning system equipped with a primary carbon adsorber shall measure, on a weekly basis, the concentration of perchloroethylene in the exhaust of the carbon adsorber to determine that the perchloroethylene concentration in the exhaust is equal to or less than 100 parts per million by volume. The measurement shall be taken while the dry cleaning machine is venting to the carbon adsorber at the end of the last dry cleaning cycle prior to desorption of the carbon adsorber. The owner or operator shall:
1. Use a colorimetric detector tube designed to measure a concentration of 100 parts per million by volume of perchloroethylene in air to an accuracy of ± 25 parts per million by volume; and
 2. Use the colorimetric detector tube according to the manufacturer's instructions; and
 3. Provide a sampling port for monitoring within the exhaust outlet of the carbon adsorber that is easily accessible and located at least eight stack or duct diameters downstream from any flow disturbance such as a bend, expansion, contraction, or outlet; downstream from no other inlet; and two stack or duct diameters upstream from any flow disturbance such as a bend, expansion, contraction, inlet, or outlet.
- (c) The owner or operator of a dry cleaning system equipped with a secondary carbon adsorber shall operate and maintain the system in accordance with the manufacturer's specifications.

(15) Recordkeeping and Reporting Requirements.

- (a) Each owner or operator of a dry cleaning facility shall submit to the Department a compliance certification in accordance with 310 CMR 70.00.
- (b) Compliance Notification. Each owner or operator of a dry cleaning facility shall notify the Department, on forms provided by the Department, on or before September 15, 2008, either electronically utilizing the electronic form via eDEP or by submitting a paper form by registered mail, and subsequently as required by 310 CMR 70.03, of the facility's compliance with the requirements contained in 310 CMR 7.26(10)-(16) and provide the following information:
1. The name and address of the owner or operator;
 2. The name and address (that is, physical location) of the dry cleaning facility;
 5. The type of each dry cleaning machine(s) and its serial number;
 6. The installation date of each dry cleaning machine;
 5. A description of the type of air pollution control device(s) used to comply with 310 CMR 7.26(12)(a) or (b) as applicable;
 6. The most recent 12-month perchloroethylene quantity purchased, based on invoices or receipts;
 7. Whether or not the dry cleaning facility is located in a building with a residence;
 8. Whether or not the dry cleaning facility is located in a building with a leased space, another tenant, or owner occupant(s);

9. Whether or not the dry cleaning facility is co-located with sensitive populations such as a licensed day care centers, a health care facility, a prison, an elementary school, middle school or high school, a children's pre-school, a senior center or a youth center.
10. The compliance status of the facility; and
11. That all information submitted is in accordance with 310 CMR 7.01(2)(a)-(c).

(c) Change in status Notification. Each owner or operator of a dry cleaning facility shall notify the Department, on forms provided by the Department, when there is a change in ownership, a cessation of dry cleaning operations, a change to a non-perchloroethylene solvent, and provide the following information where applicable.

1. Change in Ownership: The specific date for transfer of responsibility, coverage, and liability between the current and new owner and operator. The new owner shall notify within 60 days of the purchase of the operation.
2. Cessation of operation: The specific date that operation of the dry cleaning system(s) ceased at the facility within 60 days of ceasing operation. This notification is also necessary when the facility changes to a "drop off" facility.
3. Cessation of perchloroethylene as the dry cleaning solvent: The specific date that perchloroethylene was no longer used as the dry cleaning solvent, the manufacturer of and type of cleaning solvent within 60 days of the change.

(d) Recordkeeping. Each owner or operator of a dry cleaning facility shall keep receipts of perchloroethylene purchases and a log of the following information, as applicable, and maintain such information up to date so the 12-month rolling period compliance can be determined, and on site for at least one year, and show it upon request for a period of at least three years:

1. The volume of perchloroethylene purchased each month for the dry cleaning facility as recorded from perchloroethylene invoices or receipts of purchases; if no perchloroethylene is purchased during a given month then the owner or operator would enter zero gallons into the log;
2. The calculation and result of the 12-month rolling period perchloroethylene consumption determined on the first day of each month as specified in 310 CMR 7.26(10)(c);
3. The dates when the dry cleaning system components were inspected for leaks, as specified in 310 CMR 7.26(13)(h) and (i), and the name or location of dry cleaning system components where leaks were detected;
4. The dates of repair and records of written or verbal orders for repair parts to demonstrate compliance with 310 CMR 7.26(13)(e) or (j);
5. The date and refrigeration system pressures or temperature sensor monitoring results, as specified in 310 CMR 7.26(14) if a refrigerated condenser is used to comply with 310 CMR 7.26(12)(a) or (b); and
6. The date and colorimetric detector tube monitoring results, as specified in 310CMR7.26(14), if a carbon adsorber is used to comply with 310 CMR 7.26(12)(a) or (b).

(16) Determination of Equivalent Emission Control Technology.

(a) Any person requesting that the use of certain equipment or procedures be considered equivalent to the requirements under 310 CMR 7.26(12) and (13) shall collect, verify, and submit to the Administrator the following information to show that the alternative achieves equivalent emission reductions:

1. Diagrams, as appropriate, illustrating the emission control technology, its operation and integration into or function with dry-to-dry machine(s) or transfer machine system(s) and their ancillary equipment during each portion of the normal dry cleaning cycle;
2. Information quantifying vented perchloroethylene emissions from the dry-to-dry machine(s) or transfer machine system(s) during each portion of the dry cleaning cycle with and without the use of the candidate emission control technology;

3. Information on solvent mileage achieved with and without the candidate emission control technology. Solvent mileage is the average weight of articles cleaned per volume of perchloroethylene used. Solvent mileage data must be of continuous duration for at least one year under the conditions of a typical dry cleaning operation. This information on solvent mileage must be accompanied by information on the design, configuration, operation, and maintenance of the specific dry cleaning system from which the solvent mileage information was obtained;
4. Identification of maintenance requirements and parameters to monitor to ensure proper operation and maintenance of the candidate emission control technology;
5. Explanation of why this information is considered accurate and representative of both the short-term and the long-term performance of the candidate emission control technology on the specific dry cleaning system examined;
6. Explanation of why this information can or cannot be extrapolated to dry cleaning systems other than the specific system(s) examined; and
7. Information on the cross-media impacts (to water and solid waste) of the candidate emission control technology and demonstration that the cross-media impacts are less than or equal to the cross-media impacts of a refrigerated condenser.

(b) Prior to operation of the dry cleaning system, an owner or operator shall receive approval of an equivalency determination of their emission control equipment from the Administrator and shall notify the Department of the Administrator's determination.